

CLAIMS

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1. An elevator system comprising:
- a cab;
  - at least one rope having a plurality of metallic load bearing members associated with the cab;
  - at least one sheave that guides the rope as the cab moves; and
  - an inspection device that provides information regarding a condition of a portion of the rope that is most likely to wear.
- 10 2. The system of Claim 1, wherein the inspection device is at a fixed point relative to the sheave.
3. The system of Claim 1, wherein the inspection device is supported to move with the cab.
- 15 4. The system of Claim 1, wherein the inspection device is positioned to provide information regarding the entire portion of the rope that is most likely to wear each time that the cab travels between chosen locations.

5. A method of inspecting at least one belt in an elevator system where the belt is associated with a cab and is guided by at least one sheave, comprising the steps of:
- ~~5~~ (A) determining a portion of the belt that is most likely to wear;
- (B) positioning an inspection device relative to the belt; and
- 5 (C) gathering information regarding a condition of the portion of the belt that is most likely to wear as the cab moves between chosen positions.

6. The method of Claim 5, wherein step (A) includes considering at least one of a plurality of system characteristics when determining which portion of the belt is most likely to wear.

- 10 7. The method of Claim 6, wherein the system characteristics include a number of bends that the belt experiences as the cab travels between locations, dimensions of a sheave along which the belt travels, the manner in which a sheave is supported within the elevator system and an angle of belt wrap around a sheave and a worst case loading on a plurality of portions of the belt.

- 15 8. The method of Claim 7, including considering several system variables, including an elevator roping arrangement, a position of a drive mechanism, a position of the sheave and a landing at which worst case car loading conditions typically occur.

9. The method of Claim 8, including weighing the various factors and determining which of those factors has a higher significance than other factors as part of determining
- 20 which portion of the belt is most likely to wear.

10. The method of Claim 5, including supporting the inspection device in a fixed location relative to the sheave.

11. The method of Claim 5, including supporting the inspection device for movement relative to other components of the elevator system.

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